Environmental Challenges & Solutions

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Duval County Health Department

History of Ash Disposal Sites

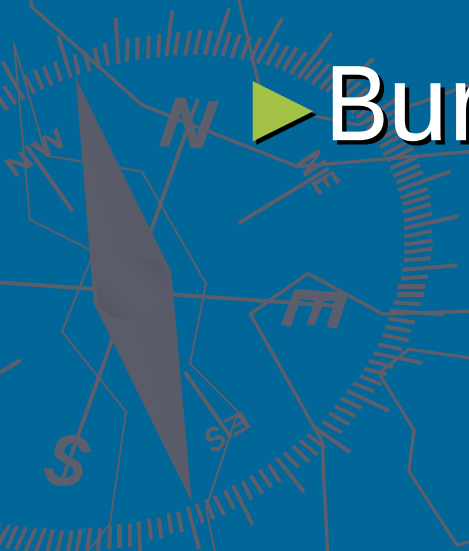
- 1940's - 1960's the City operated 3 incinerators.
- The ash from the incinerators was felt to be beneficial to soil.
- The ash was disposed in many sites around Duval County.
- The City has identified 8 sites for remediation.

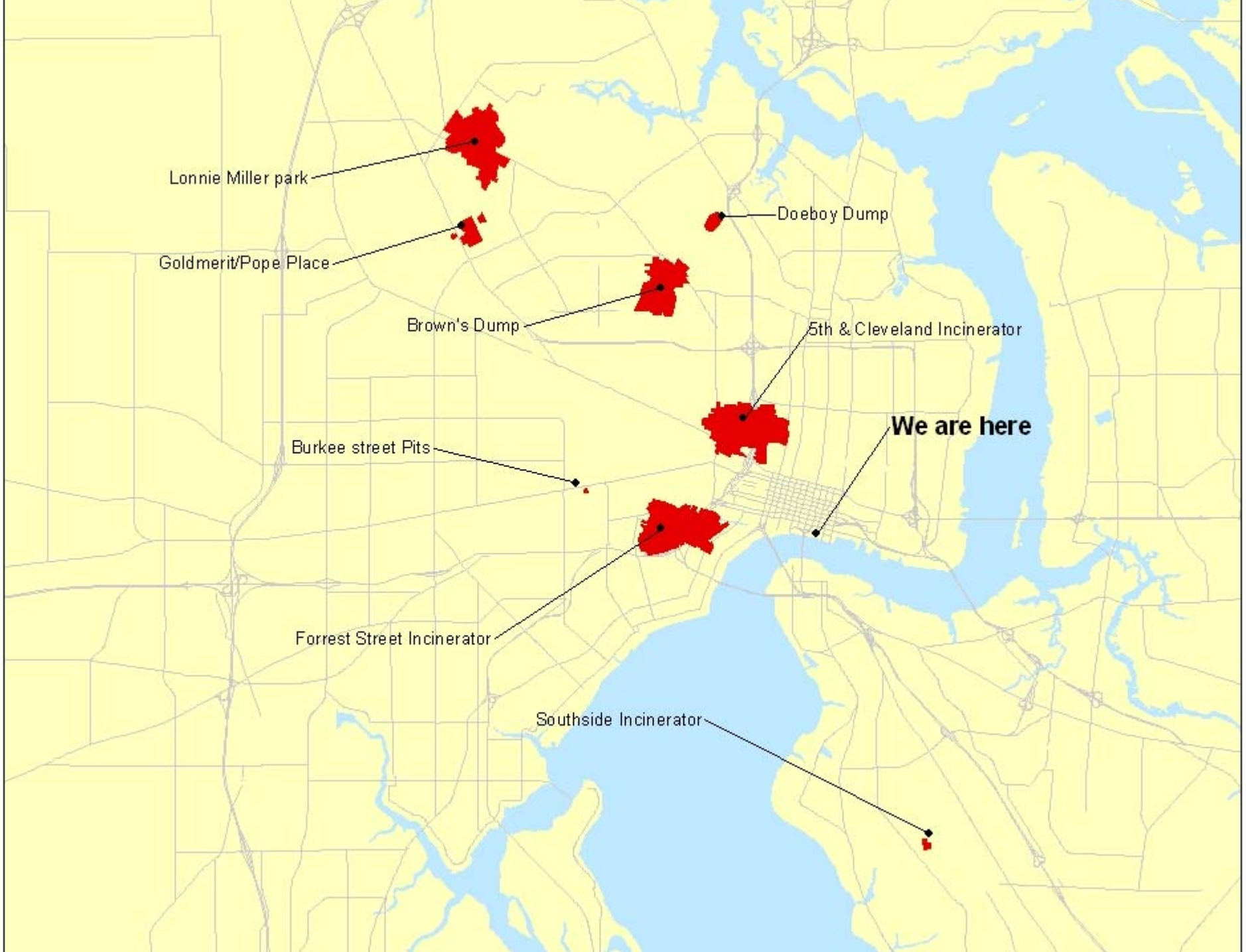
Ash Waste Sites

- 5th and Cleveland Incinerator
- Forest Street Incinerator
- Brown's Dump
- Lonnie Miller Park

Ash Waste Sites

- Southside Incinerator
- Goldmerit / Pope Place
- Doeboy Dump
- Burkee Street Pits




Lonnie Miller park
Goldmerit/Pope Place
Doeboy Dump
Brown's Dump
5th & Cleveland Incinerator
We are here
Burkee street Pits
Forrest Street Incinerator
Southside Incinerator


WARNING
NO TRESPASSING
CONTAMINATED AREA
AVOID CONTACT WITH
SOIL & WATER
Call 630-ASH7


LONNIE C. MILLER SR.
PARK
Dept. of Parks
Recreation & Entertainment

Forest Park

Other Sites

- 230 other sites around the county
- Initial site investigation of each site
- Well water, initial soil screening
- If significant contamination $\geq$ EPA
- If mild to moderate contamination will remediate site as needed
- If no contamination - no further action

Groundwater Program Activities

- Ground Water Program started in 1984 to investigate various contaminated sites
- Tested almost 17,000 potable wells
- 1167 wells monitored for changes
- 265 wells discovered with levels above MCL
- Water lines extended to 90 streets
- 40 Filter systems installed

Lead Program Activities

- Lead program started in 1995
- Tested 34,338 btwn 1-1-2000 & 12-31-2006
- Case Managed 2,602 children
- Avg. Initial EBLL >30 to EBLL <15
- Investigated Daycares & Elementary Schools ≤ 1/4 mile

What has been done to date

- 1997- 1998 EPA environmental site investigation
- 1999 State of Florida Health risk assessment of Brown's Dump
- 1999 State of Florida Contracted ATSDR to perform Health risk assessments of the other 3 sites
- Provided Informational Exchanges
- Created Environmental Toxicology Program

What has been done cont.

- Developed a Citizens Health Advisory Committee
- City of Jacksonville signed Administrative order.
- Issued a Health Advisory to prevent fish consumption from Doeboy dump
- EPA/COJ initiated and completed Remedial Investigation and Feasibility Study
- CDC Funded Pregnant Women Study
- CDC/EPA/DCHD Pesticide Exposure study in children

Citizens Health Advisory Committee

Back from Left to Right: Antonio Nichols, Dr. Aaron Hilliard, Frank Priestly, Jimmy Orth, Hastings Williams, David Jones

Front from Left to Right: Kathryn Kehoe, Jean Downing, Angie Vannatter Diane Kerr, Helen Jackson

- The Citizens Health Advisory Committee (CHAC) was formed by the mayor in August of 1999.
- The CHAC which includes CPAC's, neighborhood groups, NAACP and various academic institutions worked very closely with the health department.
- The committee participated in providing education to the community as well as increasing community involvement.

Citizens Health Advisory Committee cont..

- This was accomplished through community outreaches, information exchanges, and local ministries.
- The committee provided an invaluable resource for identifying potential concerns in the community.

Current Actions

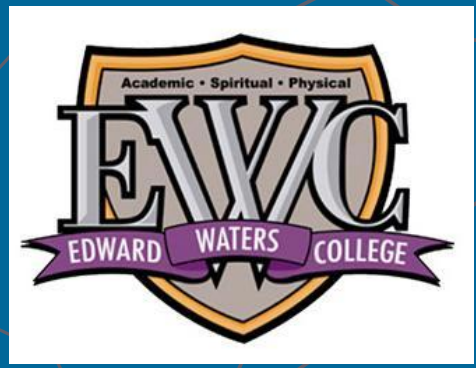
- Partnering with Fresh Ministries (Faith Based Organization), Edward Waters College, North Riverside Association and the University of North Florida on an Environmental Justice Collaborative Problem solving Grant
- UNF College of Health Nursing Program
  - Introduce students to community environmental health and outreach.
- High Schools lectures
  - Allows students to see the real world application of the scientific principals they are currently studying.

Panel Discussion

- Angela Alleyne, Ph.D. Edwards Waters College
- Diane Kerr, North Riverside Community Development Corporation
- Connie Roush, Ph.D. UNF, College of Health
- Gale Eubanks, Fresh Ministries
- Ken Pinnix, City of Jacksonville
- David Jones, Florida Department of Health

- In your experience of working with community groups in the areas of Environmental Justice and Neighborhood Redevelopment what have you found to be your greatest success and conversely your greatest challenge?

Greatest success and challenges

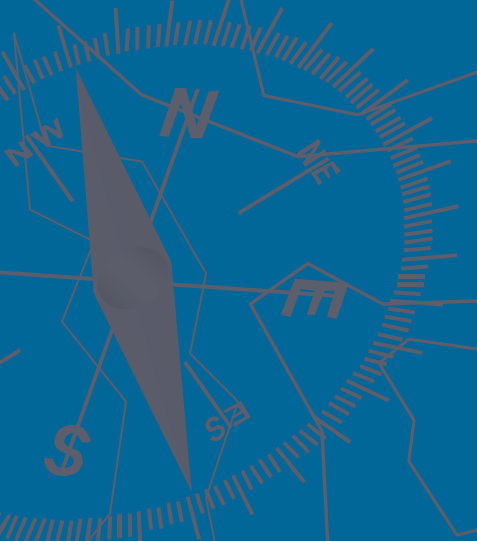


Angela T Alleyne (PhD)
Assistant Professor Biology
Edward Waters College
Jacksonville Florida

Research, Education and Community participation

North Riverside Community Development Corporation
Diane Kerr

- TAP Grantee for 3 Ash Sites
- Neighborhood Action Plan
- In-fill housing



UNF

Connie Roush, Ph.D.

- A Nurses role as “Advocate”
- How student nurses can make an impact
- Community Health impacts their perceptions and expands their understanding of Health Care

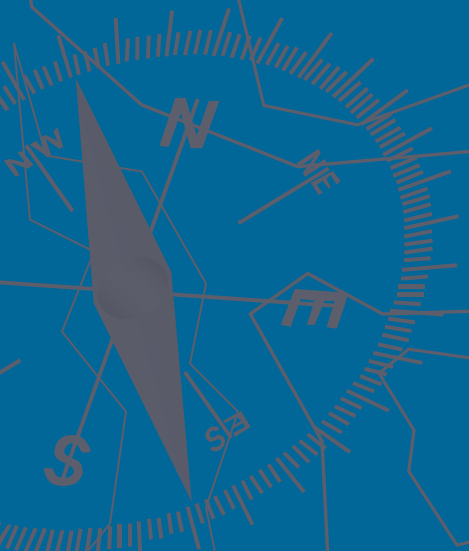
Fresh Ministries
Gale Eubanks

- **Success –**
  - Community understanding the process and committing to the process and the vision for the community.
  - Working with all Agencies in the redevelopment of the community.
  - Cultural history of East Jacksonville
- **Challenge –**
  - Helping community residents to realize they are indeed stakeholders
  - Getting local leaders, city official to commit to community with passion for the vision of positive change.
  - Resources for the community groups to continue effort for change.

Redevelopment and Reuse

- Private Investors
- EPA
  - Private Investors
  - Assessment Grants
  - Revolving Loan Fund
  - Reimbursable Phase 1 & Phase 2
  - Targeted 128(a) funds
- Dept of Agriculture
- Dept of Commerce (NOAA)
- Dept of Defense

Break, please be back in 15 minutes!



Community Meetings
What we have found to be most effective!

Community Meetings

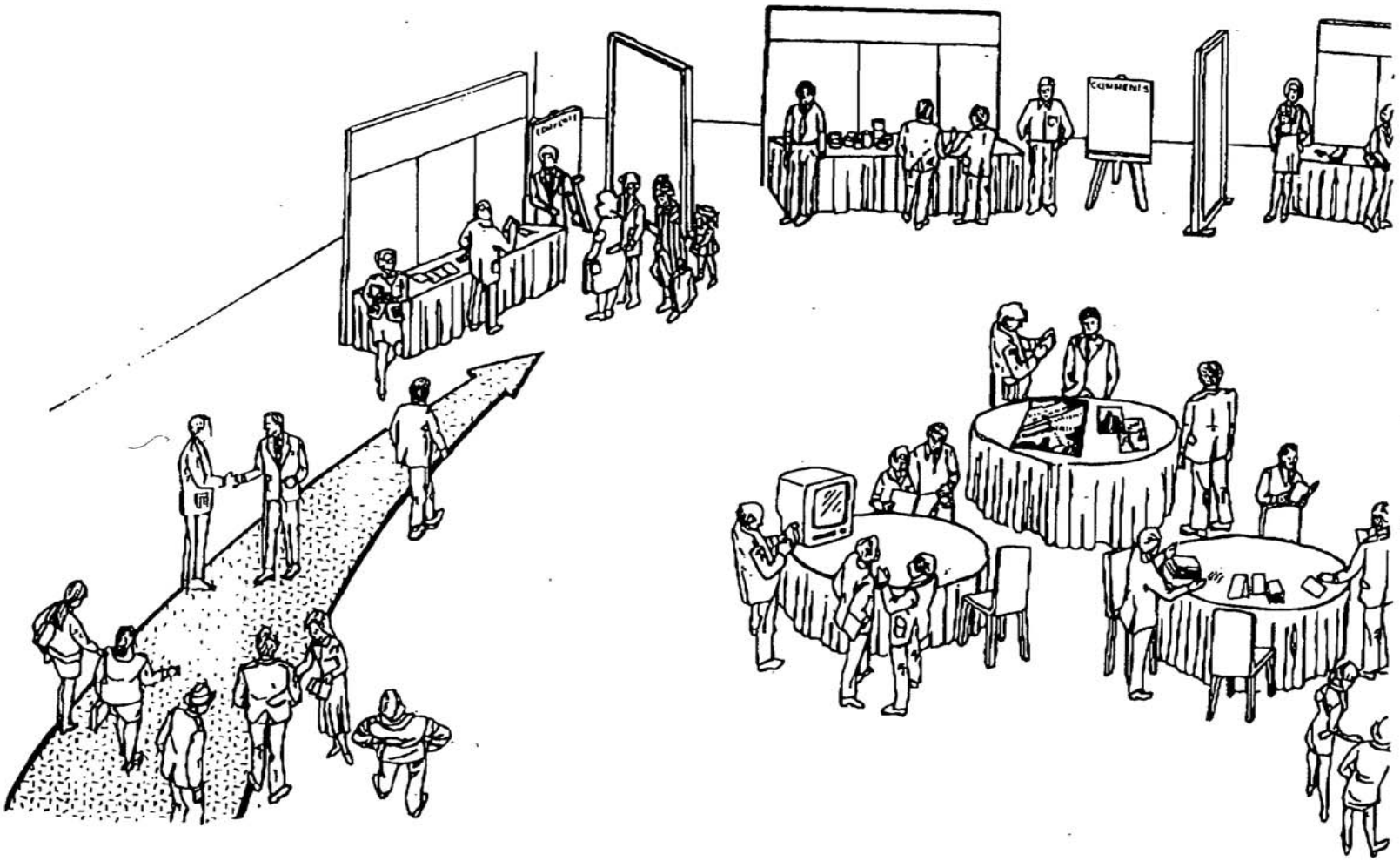
- How Trust Factors in High Concern Situations
  - Caring/Concern 50% (Assessed in first 30 seconds)
  - Competence/Experience 15 to 20 %
  - Honesty/Openness 15 to 20 %
  - Dedication/Commitment 15 to 20 %

Information Exchange

- Meeting types
  - Town hall
  - **Information Exchange**
  - International Café
  - Etc
- Benefits
  - Permits expression of diverse viewpoints
  - Encourages group dynamics
  - Small group discussions are more comfortable
  - Creates dialogue

Public Exhibit and Discussion

(Poster Exhibits / Public Availability Session)



Community Meetings

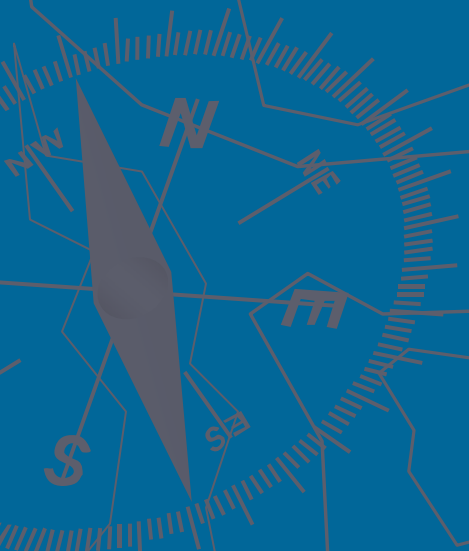
- In the “Environmental Health World”
  - Sensitive or Controversial Issue, High Concern, Low trust = Risk Communication
  - People under “STRESS” process ~ 20% info received
  - Barriers to communication have been created; communicators must be aware
  - Barriers have to be overcome

Message

- Topic;1,2,3
  - Communicate clearly
    - Positive conclusion; what it is instead of not
    - At least 2 supporting facts; 3rd party best
    - Future Action; what we will do
  - Poster Stations
    - Central main point flanked by supporting points
    - One message on each panel
    - As you go down it gets more detailed
    - Technical handouts on adjacent table

Coleman Evans Video

Comments on Video



What is Environmental Medicine?

- Environmental Medicine focuses on the person and the environment.
- Emphasizes:
  - Identification
  - Diagnosis
  - Treatment
  - Prevention

Environmental Medicine

- There are four types of environmental media
  - Air
  - Water
  - Soil
  - Food

The Media of Environmental Hazards

- Air, water and food are the major environmental media or vectors.
- Incineration is also a major source of exposure.

The Media of Environmental Hazards

- Soil is often overlooked as a route of exposure.
- Home gardens may be an exposure route.

The Discipline of Environmental Medicine

- A broad discipline involving:
  - Understanding the impact of the environment on human health
  - Eliciting appropriate exposure history
  - Recognizing exposure-related diseases
  - Identifying and Accessing resources
  - Discuss environmental risks to patients
  - Treating Patients

How do chemicals enter the environment?

- There are six ways in which hazardous substances can enter the environment.
  - Direct exposure
  - Direct discharge
  - Inadequate landfills
  - Illegal Dumping
  - Catastrophic events
  - Ecological catastrophic events

Environmental hazards cont...

- The major environmental hazards and their relative importance in various environmental settings.
  - Chemical agents: pesticides, VOC'S, and PCB'S
  - Physical agents: ionizing and nonionizing radiation, vibration, temperature, and noise.
  - Biological agents: infectious and allergic disorders

Interaction between hazardous exposures and humans

- Four characteristics critical to exposure assessment:
  - Route (Inhalation, Ingestion, Dermal)
  - Magnitude (Concentration or Dose)
  - Duration (Minutes, Hours, Days, Lifetime)
  - Frequency (Daily, Weekly, Monthly, Seasonally)

Interaction between hazardous exposures and humans cont...

- All of the environmental media are possible exposure routes.
- Humans have access to environmental toxicants by contaminated food, drinking contaminated water, and breathing contaminated air.
- Hazardous pollutants may also enter the human body through the skin or a combination of these routes.

Relationship of magnitude, duration, and frequency

- The concept of “dose” in environmental medicine is a function of the amount of the toxicant absorbed and time factors.
- A toxicant may be present in very low, perhaps minute concentrations,and stimulate biological responses in the host.
- Even a very small concentration of a highly toxic substance can cause a significant clinical response.

Environmental Medicine and Human Health

- Environmental medicine plays two major roles in human health.
  - Provides the diagnosis and treatment of health complaints attributable to the environment.
  - Contributes to a much broader understanding of the unity of human health and environmental quality.

Recognition of Human Hazardous Exposures

- The only way to accurately determine to what extent persons come in contact with a specific environmental hazardous pollutant is to actually measure the exposure.
- There are three ways to accomplish this:
  - Use of micro-environmental samplers
  - Use of personal monitors
  - Use of biologic measurements in human tissue

Children's Environmental Health

- Environmental health is an ongoing concern within the pediatric clinical practice.
- Children live in a very different environment today than previous generations.
- Advancements in information technology have contributed to the discovery and use of thousands of new chemicals.
- Unlike our pharmaceutical drugs, many of the 70,000 chemicals used in the U.S. have not been tested for safety when exposed to humans.

Children's Environmental Health

- Developing Organ Systems
  - Environmental toxicants can cause permanent damage to developing nervous, immune, and respiratory systems.
- Biological Sensitivity
  - Children's skin, respiratory and gastrointestinal absorption is greater than adults.

Children's Environmental Health

- Behavior
  - Hand-to-mouth activity and crawling can increased probability of exposure to toxicants.
- Diet
  - Children eat more pound for pound than adults. So they will absorb more hazardous residues in food.

Environmental Justice

- All children are affected by environmental hazards.
- Pollution and environmental degradation recognize no county, state, regional, or national border.
- Children living in poverty and children in racial or ethnic communities are at disproportionate risk for exposure to environmental hazards.

Environmental Justice

- Poverty can compound the adverse effects of exposure to toxicants such as:
  - Inadequate Housing
  - Poor Nutrition
  - Limited access to health care

Known Hazards for Children

- Children face many different environmental hazards including:
  - Radiation
  - Solvents
  - Asbestos
  - Mercury
  - Arsenic
  - Sulfur Dioxide and Ozone.

Environmental Medicine

- Various diseases encountered in environmental medicine are:
  - Contact Dermatitis
  - Obstructive Lung Disease
  - Nephritis
  - Neuropathy
  - Various Cancers

Outcomes from environmental hazards

- Carcinogenicity
- Heritable genetic & chromosomal mutation
- Developmental
- Reproductive
- Neurotoxicity
- Benzene, PAH'S
- Ionizing radiation
- Lead, Methylmercury
- Benzo[a]pyrene
- Organophosphate

Known Hazards for Children

- They fall into categories such as:
  - Neurotoxins
  - Endocrine Disruptors
  - Carcinogens
  - Respiratory Irritants and Inflammatants.

Known Hazards for Children

- The following are three selected environmental hazards known to seriously impact children's health.
  - Lead
  - Air Pollution
  - Pesticides

Conclusion

- Environmental medicine is the clinical arm of environmental health.
- Involves diagnosis and prevention of illness caused or influenced by external agents in a persons environment.
- Once an environmental disease has occurred, it's treatment is often within the domain of internal medicine, but it's recognition and prevention is the essence of the environmental health practice.
- Once a hazard has been recognized, control, and reduction of exposure should follow swiftly.

References & Resources

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References & Resources

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